

JAEGER-LECOULTRE'S FUTURISTIC GYROTOURBILLON 3
ADVANCES THE ART AND PAYS
TRIBUTE TO 19TH-CENTURY FOREBEARS

SPIN DOCTORS

BY LAURIE KAHLE

With a peak ceiling, a fireplace and a wall of windows overlooking the snow-covered hills of the Vallée de Joux, the cozy wood-paneled space in Manufacture Jaeger-LeCoultre's new Maison d'Antoine could pass for a Swiss chalet. Named for Antoine LeCoultre, the man who established a workshop in the family farmhouse in 1833, the Maison d'Antoine offers spaces for socializing and learning. Take a hands-on master class, and you can sit at a watchmaker's bench where you will be guided in disassembling and reassembling a movement. It's a dedicated space where devotees, collectors and other VIPs can gather and gain an enhanced appreciation of the horological achievements of Jaeger-LeCoultre, present and past.

The past and present also intermingle as international marketing and technical director

Stéphane Belmont passes around a prototype of Jaeger-LeCoultre's new Master Grand Tradition Gyrotourbillon 3 Jubilee and presents a series of renderings—from hand-drawn sketches to remarkably realistic three-dimensional images produced with the same software used to make the movie "Avatar." This dovetailing of tradition and technology may be regarded as cliché, yet it remains a prevailing theme as watchmaking progresses in the 21st century.

The Gyrotourbillon 3, inspired by the company's 19th-century pocket watches, is one particularly vibrant example of how tradition and technology productively coexist. Limited to 75 pieces in platinum, the Gyrotourbillon 3 Jubilee commemorates the 180th anniversary as part of a trilogy of timepieces in the Tribute to Antoine LeCoultre Jubilee collection, which also includes the Master Grande



Fig. 1 Flying double-axis Gyrotourbillon with cylindrical balance spring

THE DESIGN HARKS BACK TO ANTIQUE MARINE CHRONOMETERS, WHICH DEMANDED HIGH PRECISION



Fig. 2 The Jaeger-LeCoultre Master Grand Tradition Gyrotourbillon 3 Jubilee

Tradition Tourbillon Cylindrique à Quantième Perpétuel Jubilee, and the Master Ultra Thin Jubilee.

Producing such a horological milestone naturally requires state-of-the-art technology backed by generations of watchmaking savoir-faire. The first step in the production process pairs designers and technicians, who work closely to come up with a design that satisfies both the aesthetic and technical objectives of the project. “There is always a lot of back and forth, and they work for months until they find the right place for all the functions,” says Belmont. “When you have different dials and displays, it is difficult to create something that gives you the impression that every single display is in the right position.”

Once the design has been established, teams of engineers who work on the movement and case collaborate to create a realistic dimensional image of the watch using Keyshot, a program commonly found in the film industry, supported by high-powered processors. These 3D images can be finely manipulated to achieve a nearly photographic representation of the watch’s finer details—such as the slightly concave shape of the Gyrotourbillon 3’s bezel, which draws your eye directly into the dial. You can also register the ever-so-slight curve of the sides of the Master Grande case, which was tweaked to heighten a sense of sophistication and elegance. Another detail that is captured is the finely textured finish of the bridges, which are etched by hand using an electronic instrument in a modern variation of an age-old technique called *martelage*.

The Gyrotourbillon 3 breaks from its predecessors by dispensing with the upper bridge securing the tourbillon cage, making it the first flying Gyrotourbillon. The mechanism’s synchronized double rotation—with an outer carriage rotating in one minute on one axis and an inner carriage rotating in 24 seconds on another—is even more mesmerizing when the gyrotourbillon appears to float freely in an aperture at the bottom of the dial.

One of the Gyrotourbillon 3’s most distinctive characteristics is its spherical balance spring fitted with two terminal curves guaranteeing optimum chronometric performance. The design harks back to antique marine chronometers, which demanded high precision. “The only way to have two terminal curves is to have a three-dimensional hairspring,” says Belmont, who notes that the spherical hairspring is an even greater challenge than the cylindrical spring of the second Gyrotourbillon. “You have to wind the spring around the sphere and then remove the sphere without damaging the hairspring,” he explains. “That makes it even more exclusive. And sometimes it is even slightly more precise since the final curves are even closer to the axis of the balance.”

The watch’s Caliber 176—the latest of the grand maison’s 1,242 calibers—also breaks technical ground by combining the Gyrotourbillon with a digital chronograph. “We did not want to create just a regular chronograph with three counters, we wanted a chronograph that stands out,” says Belmont. The monopusher design, which is another nod to the watch’s 19th-century ancestors,

displays seconds with a central hand, while minutes are indicated with an easy-to-read digital display that instantly jumps when the seconds hand crosses the zero mark, a function that requires a lot of energy. “To achieve that and not interfere with the precision of the watch, we dedicated a second gear train with a second source of energy—a second barrel—just for the digital display,” he adds.

The Gyrotourbillon 3 is the 10th masterpiece to join the rarefied Hybris Mechanica Collection, a family of virtuoso timepieces that includes 2003’s Atmos Mystérieuse, the first Gyrotourbillon (2004), the Reverso Gyrotourbillon 2 (2008), and last year’s Duomètre Sphérotourbillon. “Back in 2009 when we launched the Duomètre à Grande Sonnerie, we looked back at what we had done in the previous 10 years, and we realized those watches were very special and unique to Jaeger-LeCoultre—no one else could replicate them,” says Belmont, explaining the genesis of the collection. Hybris, he points out, is a godlike reference meaning that these timepieces exceeded man’s notions of what could be achieved in watchmaking. “This is possible only by having a real manufacture with all the crafts under one roof and everyone interacting with each other every day,” he continues. “When we create a new watch, we say it was in development for 180 years, because there is no way to create those watches without all this experience.”

jaeger-lecoultre.com

